

3 energy spectrum produced by irradiating nucleic acids in said microorganisms at a wavelength  
4 between 242-257 nm, comprising:

5 (a) contacting said sample with a medium comprising solid phase immobilized  
6 antibodies which specifically bind to a characteristic cell surface antigen on said  
7 microorganism to form an antigen-antibody complex, thereby immobilizing said  
8 microorganism on said solid phase;

9 (b) irradiating the solid phase of step (a) with a laser light of 242-257 nm to produce  
10 a resonance enhanced Raman backscattered energy spectrum; and

11 (c) comparing said induced spectrum of step (b) with said characteristic spectrum to  
12 detect the presence of said microorganism in said sample.

10. The method of claim 9 wherein the solid phase a step (a) is washed to remove  
unbound sample and medium before the irradiating step (b).

11. The method of claim 9 wherein said characteristic spectrum is at  $1498\text{ cm}^{-1}$ .

12. A system for the detecting the presence of a specific microorganism in a sample,  
said microorganism having a characteristic resonance enhanced Raman backscattered energy  
spectrum produced by irradiating nucleic acids in said microorganisms at a wavelength  
between 242-257 nm, comprising:

(a) means for contacting said sample with a medium comprising solid phase  
immobilized antibodies which specifically bind to a characteristic cell surface antigen on said  
microorganism to form an antigen-antibody complex, thereby immobilizing said  
microorganism on said solid phase;